Mr. Michael Cook, Director
Office of Superfund Remediation
and Technology Innovation
U.S. Environmental Protection Agency
M.S. 5210G
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

SUBJECT: NOTIFICATION OF THE DECOMMISSIONING OF THE UNION CARBIDE CORPORATION SITE

Dear Mr. Cook:

This letter is intended to notify you of the decommissioning oversight actions that the U.S. Nuclear Regulatory Commission (NRC) has taken, and intends to take for the Union Carbide Corporation site located in Lawrenceburg, Tennessee.

On October 9, 2002, the NRC and the U.S. Environmental Protection Agency (EPA) entered into a Memorandum of Understanding (MOU) on "Consultation and Finality on Decommissioning and Decontamination of Contaminated Sites." The MOU provides that, unless an NRC-licensed site exceeds any of three trigger criteria contained in the MOU, EPA agrees to a policy of deferral to NRC decision-making on decommissioning without the need for consultation.

For sites that trigger the criteria in the MOU, NRC will consult with EPA at two points in the decommissioning process: (1) prior to NRC's approval of the license termination plan or decommissioning plan (DP), which NRC terms Level 1 consultation; and (2) following completion of the Final Status Survey (FSS), which NRC terms Level 2 consultation. Although the NRC's plan for consulting with EPA calls for the initial Level 1 consultation to occur early in the decommissioning process, at the time the MOU was signed, NRC had several sites which were in the latter stages of the decommissioning process. Since these sites were further along in the decommissioning process, the next opportunity to consult with EPA would be a Level 2 consultation following the completion of the FSS.

This letter is to notify you of the existence of one of these sites. This letter is not considered a Level 1 consultation because this site already has an approved DP. However, the NRC believes it is in the spirit of the MOU to notify the EPA of sites which could possibly require a Level 2 consultation in the future, and were already well into the decommissioning process at the time the MOU was signed.

The Union Carbide Corporation Site

The Union Carbide Corporation site, owned by Union Carbide Carbon Company and located in Lawrenceburg, Tennessee, was licensed beginning in August 1963 for equipment testing and nuclear fuels development. The facility licenses (the facility also was granted another license that was superseded by a State of Tennessee license) were terminated in 1975 at the request of the licensee. In 1998, Union Carbide submitted a DP for the site to address levels of contamination for enriched and depleted uranium in excess of radiological release criteria.

The site is currently completing remediation on Phase 2 of a DP, addressing soil contamination, approved by the NRC in December 2000. (Phase 1 of the DP, approved by NRC in July 2000, was for remediation of building contamination). The site consists of approximately 583 acres, of which approximately 10 acres constitute a fenced area where licensed activities took place. Of this area, small portions of soil adjacent to and near buildings contain elevated radionuclide concentrations. The approved Phase 2 DP for soil contamination contains derived concentration guideline levels (DCGLs) for 2 radionuclides that exceed the MOU trigger values for soil [i.e, uranium-235 (U-235) and U-238] in soil. Completion of remediation is anticipated in 2007.

Since the Union Carbide Corporation Site is not licensed, no license termination action will occur when remediation work is completed. When site remediation is completed, the doses to the average member of the critical group at the site will be in compliance with NRC's criteria in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 20 Subpart E that provides an all-pathways dose criteria of 0.25 millisieverts per year (25 millirem per year) plus as low as is reasonably achievable (ALARA), to an average member of the critical group. The dose criteria in 10 CFR Part 20 Subpart E are fully protective of the public health and safety and were the result of a comprehensive rulemaking, including an accompanying generic environmental impact statement. Furthermore, individuals at a decommissioned site are expected to receive doses substantially below the constraint level because of ALARA, conservative dose modeling assumptions, and the nature of the cleanup process itself, which often reduces residual contamination levels significantly below site DCGLs.

Another reason the residual radioactivity at the site is expected to be much lower than the approved DCGL values is that the final cleanup values that will be used at this site to achieve 25 millirem per year must be based on an all pathways, sum of the fractions approach. The DCGLs in the DP represent the maximum levels for each radionuclide without considering the existence of other radionuclides. Thus, in applying the sum of the fraction requirement, the actual cleanup values will be reduced to ensure that the potential dose from all residual radioactivity at the site in all media is less than 25 millirem per year.

Based on NRC’s decommissioning experience, a Level 2 consultation might not be necessary, because the levels of residual radioactivity remaining after remediation could be lower than the MOU trigger levels. However, if the residual radioactive material concentration levels in soil at the conclusion of remediation still exceed the MOU trigger values, NRC will enter into Level 2 consultation with the EPA in accordance with the MOU.

As part of the Phase 2 DP review and approval process, the NRC staff prepared, and issued for public comment, an environmental assessment (EA) to document how site remediation at the Union Carbide Corporation site would ensure protection of the public health and safety, and the environment.[1] The EA was published in the *Federal Register* on November 15, 2000, at 65 FR 69055. The EA concludes that approval of the DP would not result in any significant impacts on the human environment and is protective of human health. In addition, the approval of the DP was based on the NRC staff's Safety Evaluation Report (SER) issued on December 1, 2000.[2] The SER concluded that the activities described in the DP were consistent with the Commission's regulations and that approval of the DP would not be inimical to the common defense and security, or to the health and safety of the public.

Next Steps

Following site remediation activities at the Union Carbide Corporation site, NRC staff will review information contained in the FSS Report and compare the remaining levels of residual radioactivity to the MOU trigger levels. If the FSS measurements exceed the MOU trigger criteria, an additional consultation between the agencies will occur under the MOU to identify and resolve any remaining issues. In the meantime, if you have any questions regarding this letter or the remediation activities at the Union Carbide Corporation site, please contact Mr. Daniel Gillen, Deputy Director of the Decommissioning Directorate of the Division of Waste Management and Environmental Protection, at 301-415-7295.

Sincerely,

Jack R. Strosnider, Director
Office of Nuclear Material Safety
and Safeguards

Enclosure:
Proposed Remediation Values at the Union Carbide Corporation Site

cc: UCAR Service List

[1] The EA is available in NRC's electronic reading room at http://www.nrc.gov/reading-rm.html (ML003765312).

[2] The SER is available in NRC's electronic reading room at the same ML number as the EA (ML003765312).

PROPOSED REMEDIATION VALUES
AT THE UNION CARBIDE CORPORATION SITE

Radionuclide	DCGL (soil)*	MOU (soil)*
U-234	327	401
U-235	51.3	20 (with daughters)
U-238	172	74 (with daughters)
Th-232	2.6	5

*soil values reported in pCi/g

Enclosure